I. Remarks/Arguments

Claims 1, 7 through 22, 30, and 31 are pending in the application. The Examiner rejected all pending claims as being unpatentable over U.S. Patent No. 6,404,707 to Kaneda *et al.* in view of Japanese Patent Application No. JP 408096410A to Nakano. Applicant traverses this rejection and requests reconsideration.

A. The references do not disclose a layer underlying the edge surface.

All independent claims of the present application require "an underlying layer". This limitation is not described in either reference. Applicant according respectfully requests reconsideration of the Examiner's conclusion that a person of ordinary skill in the art would have used a combination of Nakano and Kaneda to produce a layer underlying the edge surface.

Nakano directs his invention to a protective coating on a magneto-optical disk. In the prior art, as illustrated in Nakano's Figure 8 ("the conventional magneto-optical disk"), the protective coating 103 forms a ridge 104 because of the spin-coating method of applying the protective coating 103. (Nakano describes this method in Paragraphs 0003 through 0005.)

It is important to note Nakano's use of the term "edge". Nakano aims to prevent corrosion of the "periphery edge of an optical disk". *See* Paragraph 0008. Nakano, however, uses "edge" (at least in the translation as provided by the Office) as a part of the optical disk laying in the plane of the optical disk. He describes the upheaval width W1 as being the distance from the location a where the thickness of the protective coat 3 begins to increase, to the "periphery edge b". *See* Paragraph 0025 and Figure 1. So Nakano's "edge" is the outer circumference of the plane of the disk, conveniently illustrated as element 21 in Figure 3.

Nakano refers to the area perpendicular to the plane of the optical disk as the "periphery end-face 1a". *See* Paragraph 0024. Applicant, however, refers to this area as an "edge surface".

Of course, both Nakano and Applicant are entitled to be their own lexicographers. Nakano clearly means "edge" in the sense of definitions 2a and 2b of Webster's On-Line Dictionary (http://www.m-w.com/cgi-bin/dictionary), a copy of which is attached as Exhibit A:

> **2a:** the line where an object or area begins or ends: BORDER <on the *edge* of a plain> **b:** the narrow part adjacent to a border <the *edge* of the deck>.

Nakano's "edge" of the plane of his disk is both the edge of a plain, the plain being the top of the disk, or the edge of the deck, the deck being the top of the disk. Applicant, however, clearly used the term "edge surface" as being what Nakano calls an "end-face". Applicant specifically described and illustrated his edge surface, for example:

- edge surface 8, illustrated in Figure 1;
- edge surface 18, illustrated in Figures 3a and 3b;
- edge surface 21, illustrated in Figure 4

This distinction is important. Nakano can call his end face what he wants to call it and Applicant can call his edge surface what he wants to call it, but Nakano does not describe applying a coating to cover his "end face". Rather, Nakano applies a coating to his "edge", which is the edge of the plane of his disk. Nakano does not apply his protective coating 3 to the entire end face 1a of his transparence base 1. Of course he does not, his whole purpose is to reduce the height of the ridge of protective coating formed in the plane of the optical disk. Nakano has no interest whatsoever in his end face 1a.

Therefore, the combination of Kaneda and Nakano, even if proper, which Applicant does not concede, does not teach every limitation of the claims of the present invention. Nothing in the combination of these two patents describes an edge surface comprising a substantially smooth surface having an underlying layer comprising a second set of data.

Moreover, Nakano teaches away from the disclosure of the present invention. A person of skill in the art at the time of Applicant's invention, if looking to Nakano for guidance, would have learned not to apply a protective coating to the end face of the disk. Nakano solved a completely different problem. He wanted to reduce the height of the ridge (element 104 in his Figure 8, element 4 in his Figures 1, 2, and 4) so he can increase the area of the recording layer (element 102 in Figure 8, element 2 in Figures 1, 2, and 4) than can be read by the magneto-optical reader and therefore increase the density of the disk.

Nakano solves this problem by varying the speed of rotation of the disk during the spin-coat process. This method does not coat the end face or edge surface of the disk. In fact, coating the end face or edge surface will increase the diameter of the disk, forcing the manufacturer to decrease the size of recording layer 2 and base 1 so that the disk will fit in the disk drive, a result completely the opposite of what Nakano wanted. So someone trying to put data on the edge surface will not look to Nakano. A person of ordinary skill in the art, trying to put data on the edge surface, would have been discouraged by Nakano, rather than finding Nakano useful

"A reference may be said to teach away when a person of ordinary skill upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 U.S.P.Q.2d 1130, 1131 (Fed. Cir. 1994).

Therefore, the Applicant's claims are not obvious over the combination of Kaneda and Nakano. Independent claims 1, 21, 22, 30, and 31 are therefore patentable. Applicant therefore respectfully requests reconsideration of the rejections of the claims.

B. **Kaneda must add material to the edge surface.**

Kaneda must add something to his edge surface in order to store data on that surface. He discloses a bar code, so he must either add material to the surface (such as applying ink to the surface or building up the surface with bars of additional material), or remove material from the surface (such as by cutting notches in the surface). Somehow, he must provide bars on the surface to have a bar code.

In contrast, all independent claims (1, 15, 16, 17, and 18) of the present application claim "a substantially smooth surface", so no material is added to the edge surface and no notches are cut in the edge surface. Moreover, these independent claims all specify that the second set of data is on "an underlying layer". Kaneda, as recognized by the Examiner, does not disclose an underlying layer. Nakano does not disclose an underlying layer because, as set forth above, Nakano is trying to increase the area on top of the disk that is available for recording, a purpose at odds with having an underlying layer on the disc edge.

C. **Kaneda does not disclose a writable edge surface.**

Kaneda discloses a disk data storage media. Applicant agrees with the Examiner's conclusion that Kaneda's disk 10 has first and second disk surfaces with at least one of those surfaces being an optical disk surface formed to store a first set of data, and an edge surface (as Applicant uses the term "edge") having a substantially smooth surface with a printed layer included a second set of data 990, which can be used independently of the first set of data. Applicant traverses the Examiner's conclusion that Kaneda's disk edge surface is readable and writable.

Kaneda is directed to a disk storage apparatus, so he must have some means to identify specific storage media within his apparatus. He discloses three such means: a bar code on the

tray carrying the disk, an EEP-ROM embedded in the tray, and a bar code printed on a side surface of the disk. Of course, only the third means is relevant here, as Applicant has no claims directed to the tray carrying the disk.

With respect to bar codes printed on a side surface of the disk, Kaneda states:

> In the case of a medium 10 shown in FIG. 11A, a bar code 990 is printed on a side surface of the medium 10. A medium 10 used in this embodiment has a thickness of 1.2 mm. A bar code 990 printed on a side surface of the circumference of a medium 10 can be read out by the drive while the medium 10 is rotating. In this case, the drive requires a bar-code read circuit dedicated to such a bar code 990.

Column 10, lines 14-20.

Accordingly, Kaneda discloses only a readable edge surface. He specifically describes a dedicated *read* circuit. He does not disclose, discuss, or even allude to being able to write on the edge surface. Therefore, Applicant respectfully requests that the Examiner reconsider his conclusion that Kaneda's disk edge surface is writable.

Kaneda does not disclose writing data to the disk edge surface. Nakano does not disclose writing data to the disk edge surface. (No art other than Kaneda is cited for writing data to the disk edge surface.) Accordingly, a combination of Kaneda and Nakano, even if proper, which Applicant does not concede, does not reach all the limitations of the claims directed to a writable disk edge surface. Therefore, the claims are patentable over Kaneda and Nakano at least to the extent that the claims call for the disk edge surface to be readable and writable (*e.g.*, claim 7).

D. Kaneda and Nakano do not describe the limitations of claims 11 through 22, 30, and 31.

Because the independent claims are not obvious over Kaneda and Nakano, the dependent claims are similarly patentable. Additionally, however, these claims contain limitations also not

found in Kaneda and Nakano. These limitations are not discussed in the July 1, 2005 Office Action and appear to be conceded by the Office.

1. The references do not each the angled annular surface of claim 11.
2. The references do not teach the pair of opposed, angled surfaces that define a generally triangular cross-section having an apex at the edge surface of claim 12.
3. The references do not teach the angled surface of claim 13.
4. The references do not teach the annular flange of claim 14.
5. The references do not teach the two layers of claim 15.
6. The references do not teach monitoring physical characteristics of the disk and movement of the disk, as in claim 16.
7. The references do not teach monitoring tilt, vibration, or rotation speed, as in claim 17.
8. The references do not teach receiving material having a surface to store data not extending beyond the maximum diameter, as in claim 18.
9. The references do not teach the groove of claim 19.
10. The references do not teach the wire of claim 20.

Applicant accordingly requests reconsideration of the rejections of the claims.

E. The references do not suggest the combination of the references.

The Office Action does not state any motivation to combine Nakano and Kaneda. Rather, the Office Action merely states that "one of ordinary skill in the art . . . would have been motivated . . . ." (*See* Office Action at page 3.) But there must be some motivation to combine these two references. For example, Section 2143.01 of the Manual of Patent Examining Procedure addresses the suggestion or motivation to combine references:

> "There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149

> F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

The nature of the problem to be solved does not suggest the combination of Nakano and Kaneda. Nakano wants to increase the recording capacity and prevent corrosion at the outer circumference of the disk edge (which, as explained above, is the top of the disk). Kaneda wants to shorten the mount time between mounting of a disk and accessing the disk. So looking at the problem to be solved does not suggest combining these references.

The teachings of the prior art similarly do not suggest the combination. Nothing in Kaneda or Nakano would have suggested to one of ordinary skill in the art to look at the other reference.

The final source, the level of the skill in the art, cannot be relied upon to provide a suggestion to combine. Therefore, Applicant respectfully suggests that there is no motivation to combine the references and that the combination is therefore improper.

The mere possibility that the two references can be combined does not produce obviousness. MANUAL OF PATENT EXAMINING PROCEDURE at Section 2143.01(III). There is no suggestion within the references of the desirability of combining the references. Applicant accordingly requests that the Section 103 rejection be withdrawn.

F. **Summary**

The references do not disclose a layer underlying the edge surface, as claimed in the present application. The references require adding material to the edge surface. The references do not disclose a writable edge surface. The references do not suggest the desirability of the

claimed invention. The references do not disclose the limitations of dependent claims 11 through 22, 30, and 31. Applicant accordingly requests that the rejections be set aside and the claims be allowed.

It is expected that this Response places the present application in condition for allowance. Should the present claims not be deemed adequate to effectively define the patentable subject matter, the Examiner is respectfully urged to call the undersigned attorney of record to discuss the claims in an effort to reach an agreement toward allowance of the present application.

Respectfully submitted,
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Date: December 28, 2005

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Attachment: Exhibit A: Definition of "edge" from Merriam-Webster OnLine dictionary, www.m-w.com

EXHIBIT A

Merriam-Webster OnLine

Merriam-Webster Online Dictionary

Thesaurus

edge

15 entries found for edge. The first 10 are listed below.
To select an entry, click on it. For more results, click here.

- edge[1,noun] Go
- edge[2,verb]
- cutting edge
- deckle edge
- edge city
- edge effect

Main Entry: ^{1}**edge**
Pronunciation: 'ej
Function: *noun*
Etymology: Middle English *egge*, from Old English *ecg*; akin to Latin *acer* sharp, Greek *akmE* point
1 a : the cutting side of a blade **b :** the sharpness of a blade **c** (1) **:** FORCE, EFFECTIVENESS <blunted the *edge* of the legislation> (2) **:** vigor or energy especially of body <maintains his hard *edge*> **d** (1) **:** incisive or penetrating quality <writing with a satirical *edge*> (2) **:** a noticeably harsh or sharp quality <her voice had an *edge* to it> **e :** keenness of desire or enjoyment <lost my competitive *edge*> <took the *edge* off our appetites>
2 a : the line where an object or area begins or ends **:** BORDER <on the *edge* of a plain> **b :** the narrow part adjacent to a border <the *edge* of the deck> **c :** a point near the beginning or the end; *especially* **:** BRINK, VERGE <on the *edge* of disaster> **d :** a favorable margin **:** ADVANTAGE <has an *edge* on the competition>
3 : a line or line segment that is the intersection of two plane faces (as of a pyramid) or of two planes
- **edge·less** *adjective*
- **on edge :** ANXIOUS, NERVOUS

For More Information on "edge" go to Britannica.com
Get the Top 10 Search Results for "edge"